

WHAT IS CLAIMED IS:

1. A slider comprising:
  - a slider body having a trailing edge and a leading edge;
  - a thin film structure deposited in layers on the trailing edge, the structure comprising:
    - a write transducer configured to write data to a storage medium; and
    - a non-thermally activated actuator at least partially formed with the write transducer and configured to move the write transducer relative to the trailing edge.
2. The slider of claim 1, wherein the actuator includes a stress field deposited in the layers of the thin film structure adjacent and with the write transducer, the stress field having a low stiffness layer interposed between a pair of high stiffness layers.
3. The slider of claim 1, wherein the actuator comprises:
  - a yoke;
  - a conductive coil located within the yoke; and
  - an actuating material magnetically coupled to the yoke and conductive coil.
4. The slider of claim 3, wherein the actuating material comprises one of a magnetostrictive material and a ferromagnetic shape memory alloy.
5. The slider of claim 1, wherein the actuator comprises:
  - a pair of conductive contacts; and
  - an actuating material electrically coupled to the conductive contacts.

6. The slider of claim 5, wherein the actuating material comprises one of a piezoelectric material and a magnetoelectric composite.
7. The slider of claim 5, wherein the actuating material is deposited on the pair of conductive contacts such that the actuating material expands as a voltage is applied across the conductive contacts.
8. The slider of claim 5, wherein the pair of conductive contacts are deposited on the actuating material such that the actuating material expands as a voltage is applied across the conductive contacts.
9. The slider of claim 5, wherein the actuating material is deposited between the pair of conductive contacts such that the actuating material shears as a voltage is applied across the conductive contacts.
10. The slider of claim 1, wherein the thin film structure further comprises a read transducer configured to read data from the storage medium, the read transducer formed and deposited adjacent the write transducer.
11. The slider of claim 10, wherein the actuator is at least partially formed and deposited with the write transducer and the read transducer.
12. The slider of claim 10, wherein the read transducer is deposited on the write transducer.

13. The slider of claim 10, wherein the write transducer is deposited on the read transducer.
14. The slider of claim 10 including a first compliant layer deposited prior to the write transducer.
15. The slider of claim 14 including a second compliant layer deposited on one of the write transducer and the read transducer.
16. The slider of claim 10 including a first compliant layer deposited prior to the read transducer.
17. The slider of claim 16 including a second compliant layer deposited on the write transducer.
18. A method of manufacturing a slider, the method comprising:
  - providing a slider body having a trailing edge and a leading edge;
  - forming a thin film structure deposited in layers on the trailing edge comprising:
    - forming a write transducer configured to write data to a storage medium; and
    - forming a non-thermally activated actuator at least partially with the write transducer and configured to move the write transducer relative to the trailing edge.

19. The method of claim 18, wherein forming the thin film structure further comprises forming a stress field in layers adjacent and with the write transducer, the stress field having a low stiffness layer interposed between a pair of high stiffness layers.
20. The method of claim 18, wherein forming the actuator further comprises:  
depositing an actuating material; and  
depositing a conductive coil positioned within a yoke, the yoke magnetically coupled to the conductive coil and the actuating material.
21. The method of claim 20, wherein depositing the actuating material comprises depositing one of a magnetostrictive material and a ferromagnetic shape memory alloy.
22. The method of claim 18, wherein forming the actuator further comprises:  
depositing a pair of conductive contacts; and  
depositing an actuating material electrically coupled to the conductive contacts.
23. The method of claim 22, wherein depositing the actuating material comprises depositing one of a piezoelectric material and a magnetoelectric composite.
24. The method of claim 18, wherein forming the thin film structure further comprises depositing a first compliant layer and a second compliant layer such that deformation of the write element is isolated and enhanced.

25. A slider comprising:
- a slider body having a trailing edge and a leading edge;
  - a thin film structure deposited in layers on the trailing edge, the structure comprising:
    - a write transducer configured to write data to a storage medium; and
    - a non-thermal actuator means formed at least partially coplanar with the write transducer for moving the write transducer in a direction perpendicular to a bearing surface and relative to the trailing edge.